

U.S. Serial No. 10/698,453

NIT-402

IN THE CLAIMS

1. (Currently amended) A storage area management method of a computer system having a storage area to store data, said method comprising steps of:

defining a possible data arrangement range in which the data can be arranged (hereinafter the ~~range in which data can be arranged is referred to as the "possible data arrangement range"~~);

defining range information to judge whether or not data to be stored can be arranged in said storage area;

judging whether or not said possible data arrangement range is within the range indicated by said range information[.];

outputting whether or not said possible data arrangement range is within the range indicated by said range information;

defining data in a copy-source storage area and a copy-destination storage area;

accepting a request to copy the data that is included in said copy-source storage area to said copy-destination storage area from said copy-source storage area;  
and

U.S. Serial No. 10/698,453

NIT-402

copying said data in said copy-source storage area  
to said copy-destination storage area in accordance with  
judgment from the result of said outputting step,

wherein said defined possible data arrangement range  
is designated for data in a copy-source storage area,  
and said defined range information is designated for  
a copy-destination storage area.

2. (Currently amended) A storage area management method according to claim 1, said method comprising steps of:

designating a range for storing the data;  
judging whether or not the range indicated by [[the]] said range information of said storage area is within said designated range by referring to the range information of said designated range; and

outputting whether or not the range indicated by [[the]] said range information of said storage area is within said designated range.

3. (Previously presented) A storage area management method according to claim 1, said method further comprising the steps of:

designating a capacity for storing the data;

U.S. Serial No. 10/698,453

NIT-402

judging whether or not said storage area has free space equal to or greater than said designated capacity; outputting whether or not said storage area has free space equal to or greater than said designated capacity.

4. (Canceled).

5. (Currently amended) A storage area management method according to claim [[4]]1,

wherein in the step of copying the data in said copy-source storage area to said copy-destination storage area, said data in said copy-source storage area is copied in case of judging that the range indicated said by range information for said copy-destination storage area is within the said possible data arrangement range for the data in said copy-source storage area.

6. (Currently amended) A storage area management method according to claim [[4]]1,

wherein in the step of copying the data in said copy-source storage area to said copy-destination storage area, information of the possible data arrangement range of the data in said copy-source storage area is also copied.

U.S. Serial No. 10/698,453

NIT-402

7. (Currently amended) A storage area management method according to claim [[4]]1,

wherein pre-defined processing is executed if it is judged that the range indicated by the range information defined for said copy-destination storage area is not in the possible data arrangement range of the data in said copy-source storage area.

8. (Currently amended) A storage area management method according to claim 1, said method further comprising the steps of:

obtaining [[a]] typical range information in which all data in a storage area can be arranged ~~hereinafter the range is referred to as the "typical range information"~~;

wherein said possible data arrangement range is defined as said typical range information in the step of defining said possible data arrangement range.

9. (Previously presented) A storage area management method according to claim 8,

wherein, in the step of obtaining said typical range information,

U.S. Serial No. 10/698,453

NIT-402

the typical range information of a storage area included in said storage area, or, a possible data arrangement range of data in said storage area is obtained in advance, and

a logically narrower area when the typical range information of the storage area included in said storage area is compared with the possible data arrangement range of the data in said storage area, is designated as the typical range information of said storage area.

10. (Currently amended) A storage area management method according to claim [[4]]1,

said method further comprising the steps of:  
acquiring a data capacity of said storage areas; and  
judging whether or not said copy-destination storage area has free space equal to or greater than the data capacity of said copy-source storage area; [[and]]

wherein said data is not copied if said copy-destination storage area has no free space equal to or greater than the data capacity of said copy-source storage area.

11. (Currently amended) A data processing system having a storage device,

U.S. Serial No. 10/698,453

NIT-402

wherein said storage device includes two or more storage areas;

wherein said data processing system includes [[the]] a first storage area for which a possible data arrangement range of data stored in said first storage area is defined, that is associated with a data range in which data can be located, and [[the]] a second storage area for which range information that is to be judged for storing data is defined that is associated with range information which specifies a storage area location/ attribute;

wherein said data processing system designates judges whether or not said first storage area and said associated with said data range can be located in the second storage area associated with said range information according to a comparison of said data range and range information; and judges whether or not said possible data arrangement range of said first storage area is within the range indicated by said range information of said second storage area, and

wherein said data processing system outputs whether or not said possible data arrangement range of said first storage area is within the range indicated by said range information of said second storage area said judging results.

U.S. Serial No. 10/698,453

NIT-402

12. (Previously presented) A data processing system according to claim 11, further comprising

a management computer for controlling said storage device,

wherein said management computer defines a possible data arrangement range for data in storage areas and a range information of storage areas .

13. (Currently amended) A data processing system according to claim 11, further comprising

a host computer for accessing said storage device,

wherein said host ~~computers~~ computer judges whether or not said ~~possible~~ data arrangement range of said first storage area is within the range indicated by said range information of said second storage area, and accesses data of storage areas in said storage devices in accordance with the result of judging[[;]].

14. (Currently amended) A data processing system according to claim 11,

wherein logical volumes are formed on said ~~volumes~~ first and second storages.

U.S. Serial No. 10/698,453

NIT-402

15. (Previously presented) A data processing system according to claim 14,  
wherein file systems are formed on said logical volumes.

16. (Currently amended) A data processing system according to claim 11,

wherein a data processing system defines data in a copy-source storage area and a copy-destination storage area;

wherein a data processing system accepts a request to copy the data that is included in said copy-source storage area to said copy-destination storage area from said copy-source storage area;

wherein a data processing system copies said data in said copy-source storage area to said copy-destination storage area judging from the output result of said data processing system;

wherein said defined possible data arrangement range is designated for data in a copy-source storage area,

and said defined range information is designated for a copy-destination storage area.

17. (Currently amended) A data processing system according to claim 11,

U.S. Serial No. 10/698,453

NIT-402

wherein a data processing system obtains typical range information for a copy-source storage area; and

wherein a data processing system defines said possible data arrangement range as said typical range information.

18. (Currently amended) A data processing system according to claim 11,

wherein a data processing system defines group definition information, and said possible data arrangement information range can be defined by said group definition information.

19. (Currently amended) A storage device including two or more storage areas;

wherein said storage device includes [[the]] a first storage area that is associated with a data range in which data can be located for which said storage device defines a possible data arrangement range of data stored in said first storage area, and [[the]] a second storage area for which said storage device defines range information that is to be judged for storing data that is associated with range information which specifies a storage area location/attribute;

U.S. Serial No. 10/698,453

NIT-402

wherein said storage device designates judges  
whether or not said first storage area associated with said  
data range can be located in the and said second storage area  
associated with said range information according to a  
comparison of said data range and range information; and said  
storage device judges whether or not said possible data  
arrangement range of said first storage area is within the  
range indicated by said range information of said second  
storage area; and

wherein said storage device outputs whether or not  
said possible data arrangement range of said first storage  
area is within the range indicated by said range information  
of said second storage area said judging results.

20. (Previously presented) A storage device according to  
claim 19,

wherein said storage device designates a capacity for  
storing the data;

wherein said storage device judges whether or not said  
storage area has free space equal to or greater than said  
designated capacity;

U.S. Serial No. 10/698,453

NIT-402

wherein said storage device outputs the result of whether or not said storage area has free space equal to or greater than said designated capacity.

21. (Currently amended) A data processing system comprising [[of]]:

a source storage device which has a volume stored ~~includes~~ including a copy-source storage area;

a destination storage device which has a volume stored ~~includes~~ including a copy-destination storage area;

wherein said source storage device and said destination storage device [[is]] are coupled to each other through communication devices;

wherein said source storage device and said destination device [[has]] have a memory stored storing a data copy program;

wherein the memory of said source storage device is stored stores possible data arrangement range information for the data in said copy-source storage area, and volume range information for said copy-destination storage area;

wherein said destination storage device copies transmits said volume range information for said copy-destination storage area to said source storage device, and

U.S. Serial No. 10/698,453

NIT-402

said source storage device judges whether or not the range indicated by said possible data arrangement range information for the data in said copy-source storage area is within the range indicated said volume range information for said copy-destination storage area by referring to said possible data arrangement range information stored in said memory; and

wherein said source storage device ~~transmits copy~~  
copies data from said copy source storage area to said copy-  
destination storage device area in case of judging that the range indicated by said volume range information for said copy-destination storage area is within the range indicated by said possible data arrangement range information for the data in said copy-source storage area.

22. (Previously presented) A data processing system according to 21,

wherein group definition information is stored in the memory of said source storage device, and said possible data arrangement range information can be defined by said group definition information.

U.S. Serial No. 10/698,453

NIT-402

23. (New) A data processing system according to Claim 11,

wherein said data processing system copies/migrates the storage area according to said judging results.

①

24. (New) A storage device according to Claim 19, wherein said data range in which the data can be located and said range information are information defined beforehand.